EXPRESS MAIL NO.: EL168272336US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: GATELY, MAURICE K. et al.

Serial No.: To Be Assigned (Division Of Serial No. 08/459,151)

Filed: On Even Date Herewith

For: PURIFICATION AND CHARACTERIZATION OF CYTOTOXIC LYMPHOCYTE MATURATION FACTOR AND MONCLONAL ANTIBODIES THERETO

Group Art Unit: To Be Assigned

Examiner: To Be Assigned

Attorney Docket No.: 1803-247

DECLARATION OF THOMAS E. FRIEBEL UNDER 37 C.F.R. § 1.608(a)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Thomas E. Friebel, declare and state as follows:

1. I am a partner at the law firm of Pennie & Edmonds LLP and am an attorney of record in the above-captioned application.

2. I am familiar with the proposed count in the accompanying "Request Under 37 C.F.R. §§ 1.607 And 1.608(a) For Interference With A Patent."

3. There is a basis upon which Applicants are entitled to a judgment relative to the patentee of United States Patent No. 5,811,523.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date September 22, 1999

Thomas E. Friebel

Attorney Docket No. 8573

Declaration and Power of Attorney For Patent Application

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

PURIFICATION AND CHARACTERIZATION OF CYTOTOXIC LYMPHOCYTE MATURATION FACTOR AND MONOCLONAL ANTIBODIES THERETO

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as

Application Serial No. _____

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No

I hereby claim the benefit [redacted] 35, United States Code, § 120 of any Uni[redacted]ates applicati n(s) listed below and, insofar as the subject matter [redacted]ach of the claims of this application is not discl [redacted]sed in the pri r United States application in the manner provided by the first paragraph f Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

07/455,708	December 22, 1989	Abandoned
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
07/520,935	May 9, 1990	Pending
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
07/572,284	August 27, 1990	Pending

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

George M. Gould	(Reg. No. 20970)	William H. Epstein	(Reg. No. 20008)
Bernard S. Leon	(Reg. No. 20756)	William G. Isgro	(Reg. No. 22041)
		George W. Johnston	(Reg. No. 28090)
		Catherine R. Roseman	(Reg. No. 34240)

Send Correspondence to:

George M. Gould, Esq., Hoffmann-La Roche Inc., 340 Kingsland Street, Nutley, New Jersey 07110-1199

Direct Telephone Calls to: (name and telephone number)

Catherine R. Roseman at telephone No. (201) 235-6208

Maurice Kent Gately

Full name of sole or first inventor

Maurice Kent Gately — 3/18/92

Inventor's signature — Date

Montville, Morris County, New Jersey

Residence

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Citizenship

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Post Office Address

Ulrich Andreas Gubler

Full name of second joint inventor, if any

Ulrich Andreas Gubler — 3-18-92

Second inventor's signature — Date

Glen Ridge, Essex County, New Jersey

Residence

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Citizenship

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(Supply similar information and signature for third and subsequent joint inventors.)

Jeffrey David Hulmes
Full name of third joint inventor, if any

Third Inventor's signature — Date

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Residence

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Citizenship

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Frank John Podlaski
Full name of fourth joint inventor, if any

Fourth Inventor's signature — Date 3-18-92

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Alvin Seth Stern
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Fifth Inventor's signature — Date

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Residence

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Post Office Address

459151

Richard Anthony Chi[illegible]

Full name of sixth joint [illegible]e, or, if any

Richard Anthony Chi[illegible] 3-18-92

6th Inventor's signature Date

South Kent, Litchfield County, Connecticut

Residence

USA

Citizenship

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Post Office Address

Yu-Ching Eugene Pan

Full name of seventh joint inventor, if any

Yu-Ching Eugene PAN 3/18/92

7th Inventor's signature Date

Pine Brook, Essex County, New Jersey

Residence

USA

Citizenship

10 Crane Drive, Pine Brook, NJ 07058

Post Office Address

Title 37, Code of Federal Regulations, §1.56
Duty to disclose information material to patentability.

(a) **Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned.**

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim: or

(2) It refutes, or is inconsistent with, a position the applicant takes in:
- (i) Opposing an argument of unpatentability relied on by the Office, or
- (ii) Asserting an argument of patentability.

EXPRESS MAIL [redacted] EM061 021 888US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Gately et al.

Application No.: 08/459,151

Filed: June 2, 1995

For: PURIFICATION AND CHARACTERIZATION OF CYTOTOXIC LYMPHOCYTE MATURATION FACTOR AND MONOCLONAL ANTIBODIES THERETO

Art Unit: 1646

Examiner: P. Mertz, Ph.D.

Attorney Docket No.: 1803-241

ASSOCIATE POWER OF ATTORNEY

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please recognize Thomas E. Friebel (Reg. No. 29,258) as Associate Attorney and Nikolaos C. George (Reg. No. 39,201) as Associate Agent in this application and any divisional and/or any continuations thereof.

Kindly continue to address all communications to the attorney of record:

George W. Johnston
340 Kingsland Street
Nutley, New Jersey 07110

Respectfully submitted,

Date September 22, 1999

William H. Epstein 20,008 (Reg. No.)
Attorney for Applicant(s)
Telephone: (973) 235-3723
Telefax: (973) 235-2363

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: GATELY, MAURICE K. et al.

Serial No.: To Be Assigned (Division Of Serial No. 08/459,151)

Group Art Unit: To Be Assigned

Examiner: To Be Assigned

Filed: On Even Date Herewith

Attorney Docket No.: 1803-247

For: PURIFICATION AND CHARACTERIZATION OF CYTOTOXIC LYMPHOCYTE MATURATION FACTOR AND MONOCLONAL ANTIBODIES THERETO

DECLARATION OF DR. DAVID H. PRESKY

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, DAVID H. PRESKY, PH.D., do declare that:

1. I am currently head of the Biochemical Assay Development and High Throughput Screening Unit, and am a Project Leader in the Oncology Department of Hoffmann-LaRoche, assignee of the above-captioned patent application.

2. I have extensive experience in molecular biology and immunology. One of my prime research interests has been the study of cytokines and their role in signal transduction-mediated regulation of normal and pathologic immune-related processes. In particular, I have been extensively involved in the study of the cytokine IL-12, which is also known as natural killer stimulatory factor (NKSF) and cytotoxic lymphocyte maturation factor (CLMF), and have published

numerous research articles relating to this topic. A copy of my curriculum vitae is attached hereto as Exhibit 1.

3. I hold a Ph.D. in Pharmacology, which I received in 1985 from Harvard University. From 1985 to 1988 I was a postdoctoral fellow in the laboratory of Dr. Ethan M. Shevach, Lab of Immunology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

4. I joined Hoffmann-LaRoche ("Roche") in 1988 as a senior scientist in Molecular Genetics. From 1991 to 1998 I was affiliated with Roche's Inflammation/Autoimmune Diseases division. In 1998 I began my current position as a project leader in Roche's Oncology Department, and in 1999 began my present, concurrent position as Head of Roche's Biochemical Assay Development and High Throughput Screening Unit.

5. As summarized on the attached curriculum vitae, I have authored or co-authored numerous scientific publications, have received several honors and awards and belong or serve on various professional societies and committees.

6. I have read and am familiar with United States Patent No. 5, 811,523 (the "`523 patent"), which describes a purification and cloning of NKSF. As discussed below, with respect to the `523 patent's discussion of antibodies directed against NKSF, it is clear that the `523 patent neither

adequately teaches how to make the full scope of the antibodies claimed, nor does it teach a practical way of using antibodies which specifically bind NKSF. In particular, the `523 patent provides neither a practical therapeutic use nor a practical diagnostic use for such antibodies.

7. The `523 patent states that NKSF antibodies can be generated using "standard methods for diagnostic or therapeutic use" (`523 patent c. 10, ll. 25-28). No other discussion, however, relating to the use of NKSF antibodies as part of a therapeutic use is to be found within the `523 patent. The `523 patent only proposes that certain diseases or disorders (e.g., cancer, bacterial or viral infections, immune cell deficiencies) could be treated by administering NKSF polypeptides or fragments thereof.

8. Importantly, the therapeutic uses stated in the `523 patent require an increase in NKSF activity or an enhancement of natural killer (NK) cells, a cell type whose activity is increased by NKSF. Because of this, even if NKSF antibody administration had been contemplated by the `523 patent, NKSF antibodies, especially NKSF antibodies generated using "standard methods," could not be used to increase NKSF activity or enhance NK cell function. Rather, administration of NKSF antibodies would either have no effect on either NKSF activity or NK cell function, or, if an effect was observed, administration of NKSF antibodies would actually decrease or

abolish (i.e., "neutralize") NKSF activity or NK cell function.

9. In order for an NKSF antibody to increase NKSF activity and, therefore, enhance NK cell function, the antibody would be required to at least partially mimic or induce NKSF action. An antibody directed against a soluble factor such as NKSF, however, would, if anything, exert the opposite effect. For example, an antibody which specifically binds NKSF could act to inhibit or weaken binding of NKSF to the cellular receptor or receptors to which it would normally bind and through which it would normally act to enhance NK cell function.

10. The only antibody mentioned in the `523 patent is, in fact, reported to exhibit a negative effect on NKSF activity (`523 patent, c. 16, ll. 40-46). In particular, the `523 patent states that a polyclonal antiserum directed against the NKSF 40 kD subunit blocks NKSF activity in an in vitro assay. I note, however, that the NKSF-related specificity of the reported result is questionable. Specifically, the `523 patent presents no controls nor is characterization of the antiserum provided. The only indication that an antibody which specifically reacts with NKSF might be present in the antiserum is based on the antiserum's purported NKSF inhibitory activity. This is particularly true in view of the fact that a high antiserum concentration (only a 1:100 dilution) was utilized, which can often lead to artifacts, coupled with the fact that no

controls were presented which could have ruled out possible artifacts.

11. The `523 patent also fails to teach practical diagnostic uses employing NKSF antibodies. First, the `523 patent is absolutely silent regarding diagnostic uses whatsoever, except for the statement that diagnostic uses could be performed. The `523 patent provides no information, however, that would adequately teach one of skill in the art how an NKSF antibody could practically be used for a diagnostic purpose.

12. In particular, the `523 patent fails to teach such a diagnostic use could only be performed with certain types or sets of NKSF antibodies exhibiting particular characteristics. This is due to the fact that conditions that promote production of biologically active NKSF heterodimer also promote production and secretion of free NKSF 40 kD subunit, which does not exhibit the heterodimeric activity. Thus, a successful antibody-based diagnostic use would require employing an antibody or antibodies that can somehow distinguish between the the 70 kD NKSF heterodimer and the free 40 kD NKSF subunit (e.g., a single antibody or combination of antibodies which can distinguish between the 70 kD heterodimer and the free subunits, especially the 40 kD subunit). The `523 patent fails, however, to point out this requirement for a diagnostic use.

13. Finally, it is noted that the `523 patent does not provide an adequate level of teaching that would allow routine production of the full range of antibodies claimed. Taking just one example, the teaching provided in the `523 patent would not allow one of skill in the art to routinely produce antibodies, especially monoclonal antibodies, which specifically bind the 30-35 kD NKSF subunit. As mentioned above, the `523 patent merely states that NKSF polypeptides, in conjunction with standard methods, can be used to generate NKSF antibodies. For example, I do not know of a single instance where purified or recombinant heterodimeric NKSF has successfully been used to generate a monoclonal antibody against the 30-35 kD subunit of NSKF. The `523 patent fails to explicitly teach that would be a problem, and, further, also fails to explicitly teach alternative routes by which to generate monoclonal antibodies directed against this subunit, such as utitilzing only the 30-35 kD subunit or a synthetic peptide thereof as a starting antigen.

14. I further declare that all statements made in this Declaration are of my own knowledge and are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such

willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: September 22, 1999

David H. Presky, Ph.D.

Attorney Docket No. 8408

Declaration and Power of Attorney For Patent Application

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

PURIFICATION AND CHARACTERIZATION OF CYTOTOXIC LYMPHOCYTE MATURATION FACTOR AND MONOCLONAL ANTIBODIES THERETO

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as

Application Serial No. _____

and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

07/455,708	December 22, 1989	Abandoned
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
07/520,935	May 9, 1990	Pending
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

George M. Gould	(Reg. No. 20970)	William H. Epstein	(Reg. No. 20008)
Bernard S. Leon	(Reg. No. 20756)	William G. Isgro	(Reg. No. 22041)
		George W. Johnston	(Reg. No. 28090)
		Paul G. Lunn	(Reg. No. 32743)

Send Correspondence to:
George M. Gould, Esq., Hoffmann-La Roche Inc., 340 Kingsland Street, Nutley, New Jersey 07110-1199

Direct Telephone Calls to: (name and telephone number)
Paul G. Lunn (201) 235-4387

Maurice Kent Gately
Full name of sole or first inventor

Maurice Kent Gately — 8/24/90
Inventor's signature — Date

Montville, Morris County, New Jersey NJ
Residence

USA
Citizenship

162 Konner Avenue, Montville, NJ 07058
Post Office Address

Ulrich Andreas Gubler
Full name of second joint inventor, if any

Ulrich Andreas Gubler — 8/24/90
Second inventor's signature — Date

Glen Ridge, Essex County, New Jersey 07028 NJ
Residence

Switzerland
Citizenship

4 Inness Place, Glen Ridge, New Jersey 07028
Post Office Address

(Supply similar information and signature for third and subsequent joint inventors.)

Jeffrey David Hulme
Full name of third joint inventor, if any

Jeffrey David Hulme
Third Inventor's signature

8/29/90
Date

Ringwood Passaic County, N. J. NJ
Residence

USA
Citizenship

23 Welch Road, Ringwood, New Jersey 07456
Post Office Address

Frank John Podlaski
Full name of fourth joint inventor, if any

Frank John Podlaski
Fourth Inventor's signature

8-24-90
Date

28 Lombardi Drive, New City, Rockland County, N. Y. 10956 NY
Residence

USA
Citizenship

28 Lombardi Drive, New City, Rockland County, N. Y. 10956
Post Office Address

Alvin Seth Stern
Full name of fifth joint inventor, if any

Alvin Seth Stern
Fifth Inventor's signature

8-24-90
Date

Passaic Park, Passaic County, New Jersey NJ
Residence

USA
Citizenship

295 Brook Avenue, Passaic Park, N. J. 07055
Post Office Address

Title 37, Code of Federal Regulations, § 1.56(a)
A duty of candor and good faith toward the Patent and Trademark Office rests on the inventor, on each attorney or agent who prepares or prosecutes the application and on every other individual who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. All such individuals have a duty to disclose to the Office information they are aware of which is material to the examination of the application. Such information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the applicaton to issue as a patent. The duty is commensurate with the degree of involvement in the preparation or prosecution of the application.

Richard Anthony Chiz te

Full name of sixth joint inventor.

Richard Anthony Chizmite 8-24-90

6th Inventor's signature Date

South Kent, Litchfield County, Connecticut CT

Residence

USA

Citizenship

104 Richards Road, South Kent, Connecticut 06785

Post Office Address

Title 37, Code of Federal Regulations, § 1.56(a)

A duty of candor and good faith toward the Patent and Trademark Office rests on the inventor, on each attorney or agent who prepares or prosecutes the application and on every other individual who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. All such individuals have a duty to disclose to the Office information they are aware of which is material to the examination of the application. Such information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the applicaton to issue as a patent. The duty is commensurate with the

Yu-Ching Eugene Pan

Full name of seventh joint inventor

Yu-Ching Eugene PAN 8/24/90

Inventor's signature Date

Pine Brook, Essex County, New Jersey NJ

Residence

USA

Citizenship

10 Crane Drive, Pine Brook, New Jersey 07058

Post Office Address

Title 37, Code of Federal Regulations, § 1.56(a)

A duty of candor and good faith toward the Patent and Trademark Office rests on the inventor, on each attorney or agent who prepares or prosecutes the application and on every other individual who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. All such individuals have a duty to disclose to the Office information they are aware of which is material to the examination of the application. Such information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the applicaton to issue as a patent. The duty is commensurate with the degree of involvement in the preparation or prosecution of the application.

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled NATURAL KILLER STIMULATORY FACTOR the specification of which

(check one) X is attached hereto
was filed on _____ as
Application Serial No. _____
and was amended on _____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

"Express Mail" mailing label number: B498148 64
Date of Deposit: Nov 10, 1988
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R.I. 10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.
Donna M. Cassado

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ELLEN J. KAPINOS, Registration No. 32,245; BRUCE M. EISEN, Registration No. 22,847; DAVID L. BERSTEIN, Registration No. 31,235; BRIAN P. O'SHAUGHNESSY, Registration No. 32,747; and MARY E. BAK, Registration No. 31,215,

Address all telephone calls to Mary E. Bak at telephone no. (215) 540-9206. Address all correspondence to Ellen J. Kapinos, GENETICS INSTITUTE, INC., 87 CambridgePark Drive, Cambridge, Massachusetts 02140.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Giorgio Trinchieri

Inventor's signature _____ Date _____

Residence Wynnewood, Pennsylvania 19104
Citizenship Italy
Post Office Address 355 Wister Road
Wynnewood, Pennsylvania 19104

Full name of second joint inventor Bice Perussia

Inventor's signature _____ Date _____

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Citizenship Italy
Post Office Address 2302 Waverly Street
Philadelphia, Pennsylvania 19146

Full name of third joint inventor Michiko Kobayashi

Inventor's signature Michiko Kobayashi Date 11/10/88

Residence Brookline, Massachusetts02146
Citizenship Japan
Post Office Address 175 Freeman Street, Apartment 404
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Full name of fourth joint inventor Steven C. Clark

Inventor's signature Steven C Clark Date 11/10/88

Residence Winchester, Massachusetts 01890
Citizenship United States of America
Post Office Address 122 Johnson Road
Winchester, Massachusetts 01890

Full name of fifth joint inventor Gordon G. Wong

Inventor's signature Gordon G Wong Date 11/10/88

Residence Jamaica Plain, Massachusetts 02130
Citizenship Canada
Post Office Address 40 Jamaica Way, Apartment 10
Jamaica Plain, Massachusetts 02130

Full name of sixth joint inventor Rodney Hewick

Inventor's signature Rodney M Hewick Date 11/10/88

Residence Lexington, Massachusetts 02173
Citizenship Great Britain
Post Office Address 16 Woodcliffe Road
Lexington, Massachusetts 02173